**Biology Populations Exam**

**Matching –** For the following questions, use the vocabulary words on the right side and match them to their correct definitions on the left side. Put the correct letter in the blank next to the definition on the left side. Answers cannot be used more than once.

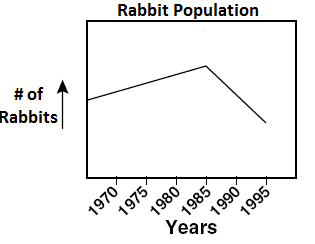
1. \_\_\_The movement of individuals out of a particular area a .Demography
2. \_\_\_The scientific study of human populations b. Carrying Capacity
3. \_\_\_Something that can cause a population’s growth to decrease c. Population
4. \_\_\_The maximum amount of individuals that a given environment d. Population Density

can support e. Emigration

1. \_\_\_Unrestricted populations experience this f. Competition
2. \_\_\_The particular area in which an organism lives g. Limiting Growth Factor
3. \_\_\_All of the individuals of one species in a particular area h. Exponential Growth
4. \_\_\_The number of individuals per unit area i. Tsunami
5. \_\_\_An example of a density-dependent factor j. Immigration
6. \_\_\_An example of a density-independent factor k. Niche

**Multiple Choice –** For each of the following questions, choose the answer that best completes the questions. There is only one correct answer for each question. Be sure to clearly circle the correct answer. Any unclearly marked answers will be counted as wrong.

1. Which of the following species would most likely show a Type III survivorship curve?
   1. Humans
   2. Birds
   3. Frogs
   4. None of the above
2. A population that has recently reached its carrying capacity would likely display which of the following graphs?
   1. c.
   2. d.
3. When a population is exhibiting a logistic growth curve it…
   1. Has been growing exponentially and has now reached is carrying capacity
   2. Is just beginning to grow exponentially
   3. Has been at is carrying capacity and is now beginning to decline
   4. Is continually fluctuating with no real pattern
4. Humans typically show what type of survivorship curve?
   1. Type I
   2. Type II
   3. Type III
   4. Type IV
5. Which of a following is NOT a main factor in population growth?
   1. Geographic distribution
   2. Density
   3. Neighboring populations
   4. Growth Rate
6. A population experiencing exponential growth will display what type of curve?
   1. L-shaped
   2. J-shaped
   3. S-shaped
   4. Parabolic
7. Suppose that rabbits are the main food source for Owls. In what year would there be the most competition between the Owls for food?

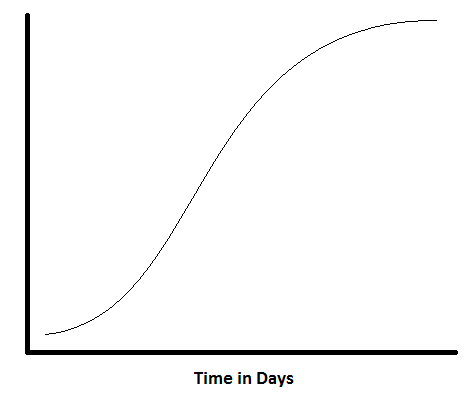


* 1. 1970
  2. 1985
  3. 1995
  4. Competition remains nearly the same

1. If a population were to exceed its carrying capacity, which of the following outcomes would be most likely?
   1. The populations birth rate may rise
   2. The populations death rate may rise
   3. The populations death rate may fall
   4. The population will adjust and remain the same
2. Birds often display which type of survivorship curve?
   1. Type I
   2. Type II
   3. Type III
   4. Type IV
3. The term geographic distribution would best be described as…
   1. All of the locations a species lives in throughout the world
   2. A particular habitat an animal lives in
   3. The different populations in a particular area
   4. The range or area occupied by a particular population

**Graph Labeling -** Use the four choices to fill in the blanks for the corresponding numbers on the graph below. Write the correct letter in the blanks next to the correct number.

1. Carrying Capacity Stage C. Exponential Growth Stage
2. Initial Growth State D. Leveling-off Stage
3. \_\_\_\_\_\_ 22. \_\_\_\_\_\_ 23. \_\_\_\_\_\_ 24. \_\_\_\_\_\_



**Number of Individuals**

24.

23.

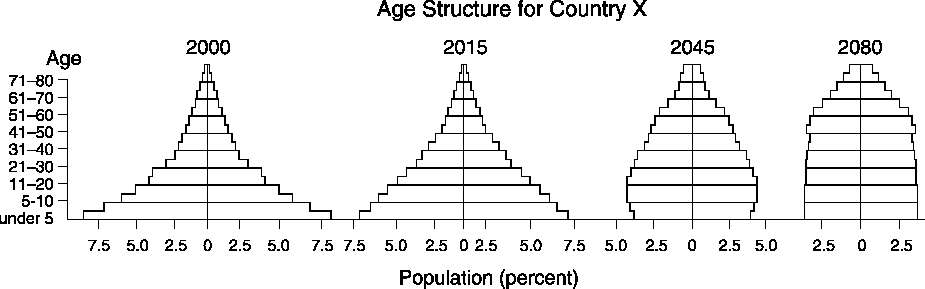
21.

22.

**Short Answer –** Answer the following using each questions directions. Use complete sentences when possible.

25. Density-dependent and Density-independent factors can greatly affect a population’s growth. Contrast the two by giving definitions and two examples of each. You may, but are not required to, use a graph or chart to answer this question. Be sure to explain why each of your examples fit the correct definition.

26. Use the graph below to answer each of the following questions.



1. In the year 2000 does Country X describe more of an industrialized or developing country? Why?
2. Describe how Country X’s population changes from the year 2000 to 2080.
3. Using the graph above, can you conclude what stage Country X’s population is in now? Which way is it headed? Be sure to explain why you know it is headed that way.

Unit Objectives

1. TSWBAT express the importance of populations
2. TSWBAT explain the definition and meanings of population density, growth rates, and geographic distribution.
3. TSWBAT Describe the three factors that affect population growth
4. TSWBAT Interpret graphs displaying exponential and logistic growth and analyze populations and find their carrying capacity
5. TSWBAT Understand limiting growth factors and contrast the difference between density dependent and independent growth factors
6. TSWBAT illustrate past trends in human population and explain how the age breakdown is in today’s world
7. TSWBAT Formulate an educated guess on what will happen to the human population and growth rates in the future
8. TSWBAT Define population, niche, emigration, and immigration
9. TSWBAT Identify the different stages of a population (Initial growth, exponential growth, level-off stage, carrying capacity).
10. TSWBAT Differentiate between the three types of survivorship curves
11. TSWBAT Understand the importance of competition as a density dependent factor

Answer Key with corresponding objectives

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| --- | --- | --- |
| **Question Number** | **Answer** | **Objective Number** |
| 1 | E. Emigration | 8 |
| 2 | 1. Demography | 6 |
| 3 | G. Limiting Growth Factor | 5 |
| 4 | 1. Carrying Capacity | 9 |
| 5 | H. Exponential Growth | 9 |
| 6 | K. Niche | 8 |
| 7 | 1. Population | 8 |
| 8 | 1. Population Density | 2 |
| 9 | F. Competition | 5 |
| 10 | I. Tsunami | 5 |
| 11 | C | 10 |
| 12 | B | 4 |
| 13 | A | 4 |
| 14 | A | 6 |
| 15 | C | 2,3 |
| 16 | B | 4 |
| 17 | C | 11 |
| 18 | B | 9 |
| 19 | B | 10 |
| 20 | D | 3 |
| 21 | B | 9 |
| 22 | C | 9 |
| 23 | D | 9 |
| 24 | A | 9 |
| 25 | Density Dependent – A limiting factor that depends on the size/density of the population. EX. Competition, Disease  Density Independent – A limiting factor that affects all populations in similar ways, regardless of population size. EX. Weather, Natural disasters | 4 |
| 26a | Developing. Population mostly young. | 1,6 |
| 26b | Developing to industrialized. | 1,6 |
| 26c | Yes. Developing moving toward industrialized. | 1,6 |